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10 DRILL PRESS TIPS

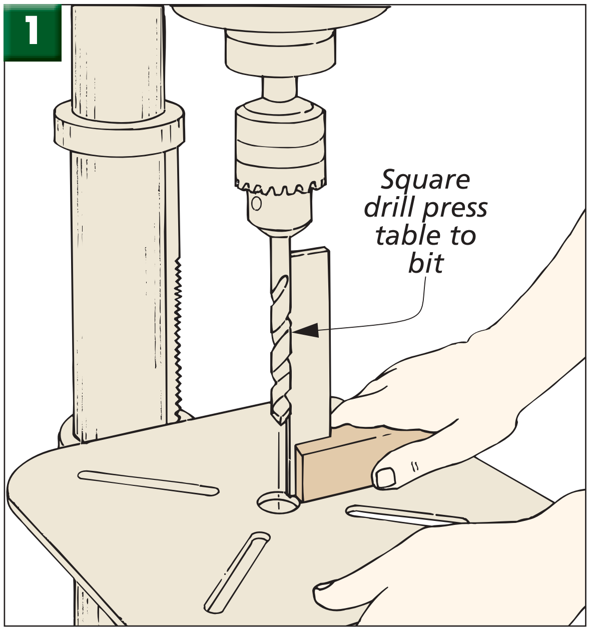
Although it may not be the centerpiece of my shop, I use the drill press in some way on almost every project. The problem is that a drill press doesn't come with the precision fences and gauges that you'll find on other shop tools. This means you can easily spend more time setting up the drill than performing the work itself. To take full advantage of what a drill press can do—without wasting a lot of time in the shop—you'll want to learn a few tricks. On the following pages we'll share some of our favorite shop tips and techniques for making your work on a drill press quicker, safer, and more accurate.

1. Align Table

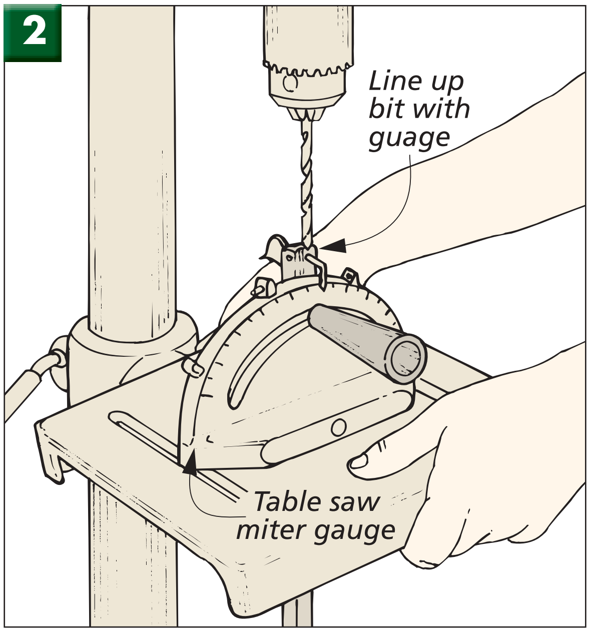
For consistent accuracy, you'll need to periodically check the alignment of your drill press table. Start by installing a rod or an ordinary drill bit in the chuck. Then align a square on the table next to the bit. Check to see that the blade of the square touches the bit near the top and bottom edges (Fig. 1). When the table is square, lock it in place. As a quick check, set the square against the other side of the bit and verify the alignment.

A handy way to check the accuracy of the table angle (for older presses that don't have index markings) is to use the miter gauge from your table saw. First set the miter gauge for the desired angle. Then place the gauge through the center hole in the table. Rotate the table until the bar of the miter gauge is in line with the column of the drill press and the drill bit (Fig. 2).

1


Square drill press table to bit

2

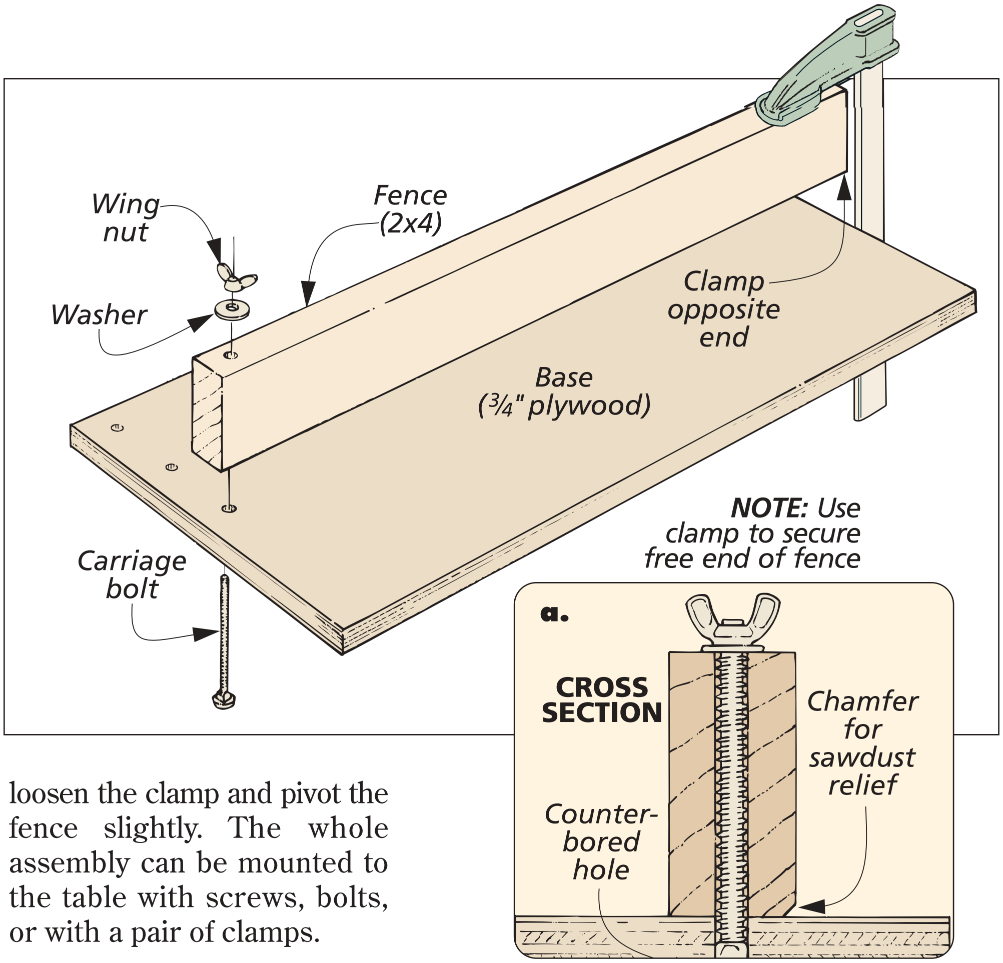


2. Add a Fence

An auxiliary table and fence will give you the same convenient workstation you're used to having with a table saw and router.

The table shown at right is a piece of ¾" plywood cut to 16" x 24". The fence is made from "two-by" stock and is cut to the same length as the auxiliary table. A small chamfer is made on the bottom edge of the fence for sawdust clearance.

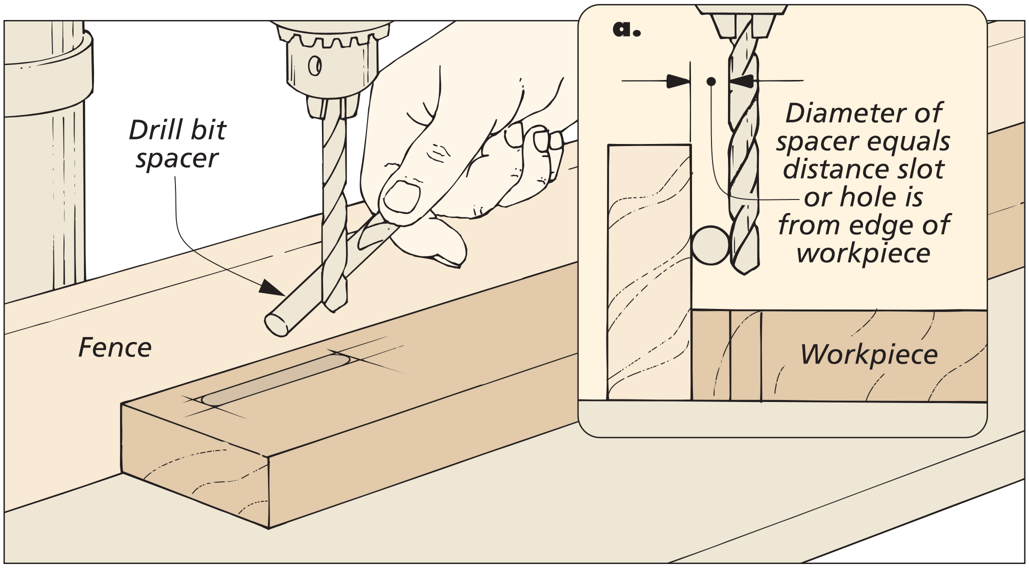
One end of the fence has a hole drilled for a carriage bolt. The bolt head is recessed into the table as shown in detail 'a' at right. (The other holes allow for greater adjustment when drilling in larger pieces.) A washer and wing nut top off the bolt, which acts as a pivot point for the fence. And a clamp is used on the opposite end to lock it in place. To adjust the fence, loosen the clamp and pivot the fence slightly. The whole assembly can be mounted to the table with screws, bolts, or with a pair of clamps.

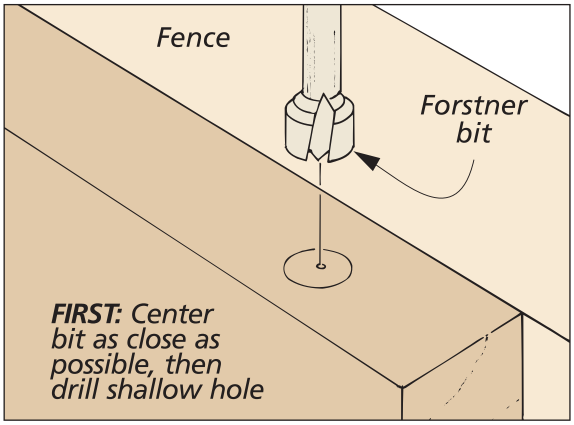


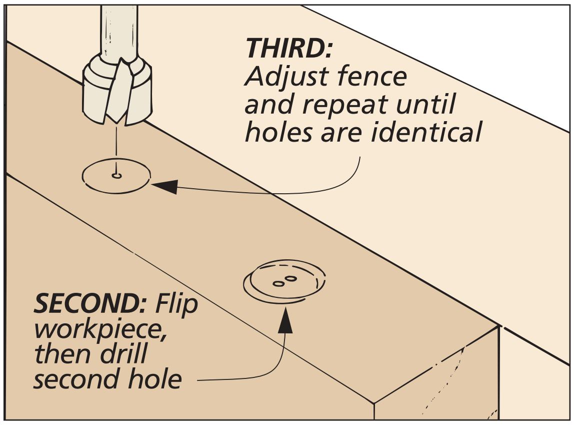
3. Use Bit as a Spacer

When drilling a hole close to the edge of a workpiece, trying to measure from the flat fence to the round drill bit can be difficult. Instead, set the spacing by using a drill bit the same size as the desired distance from the edge of the piece to the hole.

Place the shank end of the spacer bit between the fence and the bit being used. Then adjust the fence so the spacer is just touching both.


Drill bit spacer
Fence
a.
Diameter of spacer equals distance slot or hole is from edge of workpiece
Workpiece


Fence
Forstner bit
FIRST: Center bit as close as possible, then drill shallow hole


THIRD: Adjust fence and repeat until holes are identical
SECOND: Flip workpiece, then drill second hole

4. Find Center without a Ruler

Drilling overlapping holes is a quick way to rough out mortises. But centering the bit on the workpiece can be a real challenge. Instead of taking the time to measure and mark the center of the stock, I use this quick and reliable method.

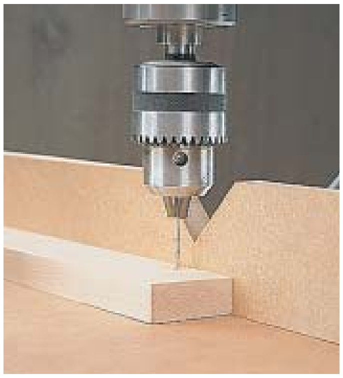
First set the fence to approximate center by eye. Then drill a shallow hole on a test piece to show the location of the bit, as in the drawing above. Next flip the piece end-for-end and drill another shallow hole directly on top of the first.

If two distinct outlines of the bit are visible, the bit is not centered. Adjust the fence slightly and test again. When the two holes line up perfectly, the bit is centered.

This technique works best with a Forstner or brad-point bit. Their design produces outlines that make it easy to see the location of the bits.

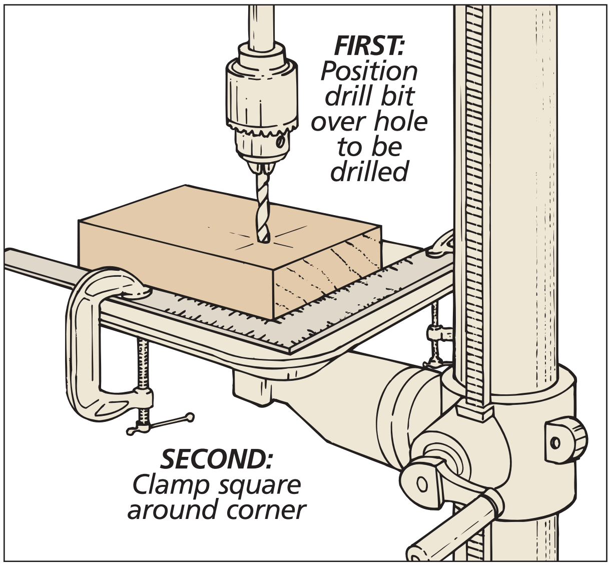
5. Add Storage

Placing a magnetic bar on the housing of the drill press provides a handy storage place for small accessories.



6. Use a V-Notch

Cutting a notch in the fence prevents the chuck from rubbing when drilling close to the fence or when using short bits.

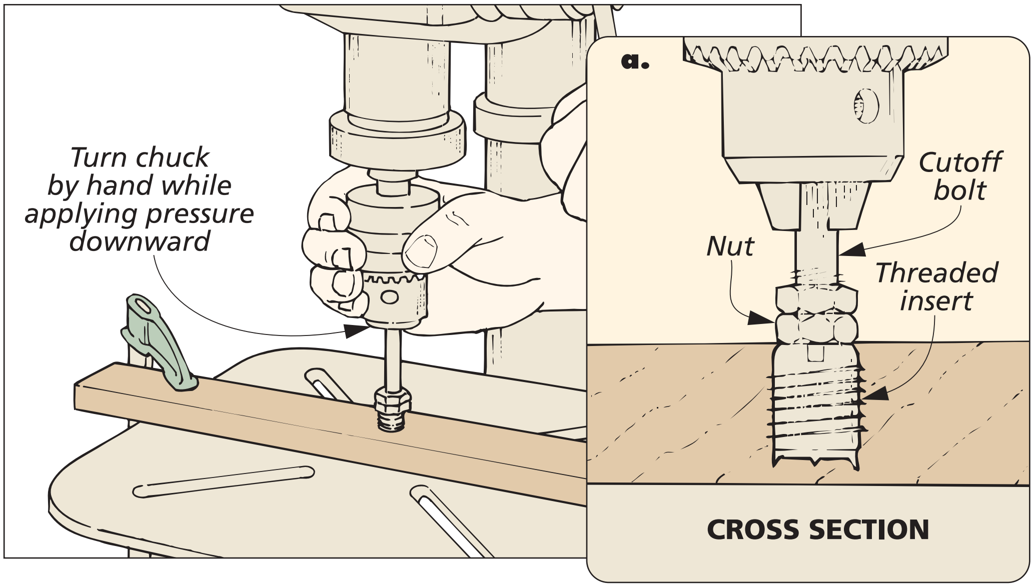

FIRST: Position drill bit over hole to be drilled
SECOND: Clamp square around corner

7. Make Quick Duplicates

I often need to make a small run of identical pieces for a project. When the hole needs to be drilled in the same spot on every piece, I use a framing square for quick alignment. The square acts as both a fence and a stop block.

Just place the workpiece under the bit where the hole will be drilled. Then set the square around the workpiece and clamp it to the drill press table as shown above.

8. Threaded Inserts



Installing a threaded insert can be tricky. You need to apply enough downward pressure to get the threads to grab, while at the same time keeping the insert from going in crooked.

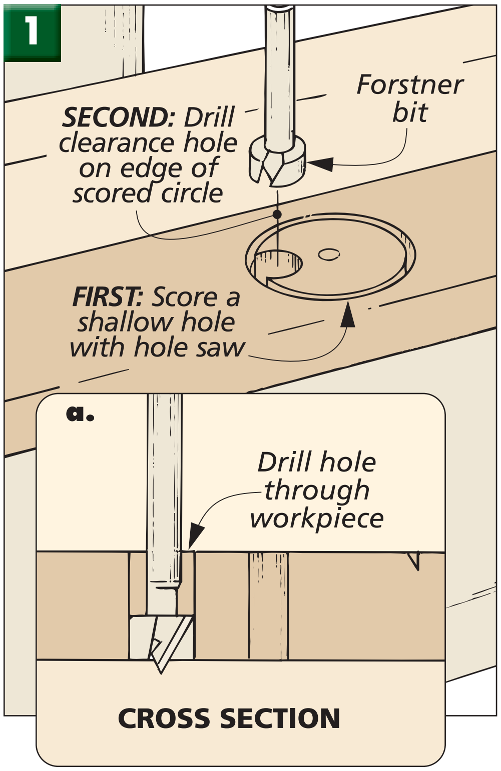
The drill press is an ideal to help with this. It will keep the insert square and let you apply plenty of downward pressure.

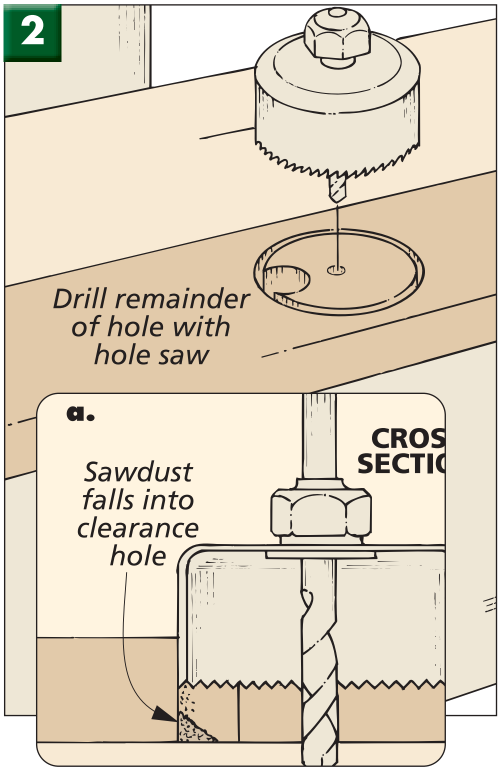
Start by drilling the hole for the insert. Then find a bolt with the same threads as the inside of the insert and cut the head off.

Before you chuck the bolt into the drill press, thread the insert onto the bolt along with a pair of hex nuts, see detail 'a' at right.

Next position the piece under the insert and clamp it to the table. Then slowly turn the chuck clockwise *by hand*, as shown in the drawing above. At the same time, slowly add moderate pressure on the quill feed lever, and the insert will begin tapping itself into the wood.

Once the insert is threaded, lock the spindle in place. Then loosen the lock nuts and remove the bolt.


1
SECOND: Drill clearance hole on edge of scored circle
Forstner bit
FIRST: Score a shallow hole with hole saw
a.
Drill hole through workpiece
CROSS SECTION


2
Drill remainder of hole with hole saw
a.
Sawdust falls into clearance hole
CROS
SECTI

9. Prevent Saw Burns

When using hole saws, the small teeth will often clog with sawdust and cause burns in the workpiece. You can prevent this by first cutting an escape path for the sawdust before you cut the hole. This not only reduces the burning, but also keeps the saw from dulling. Plus, you'll find that the blade cuts much faster.

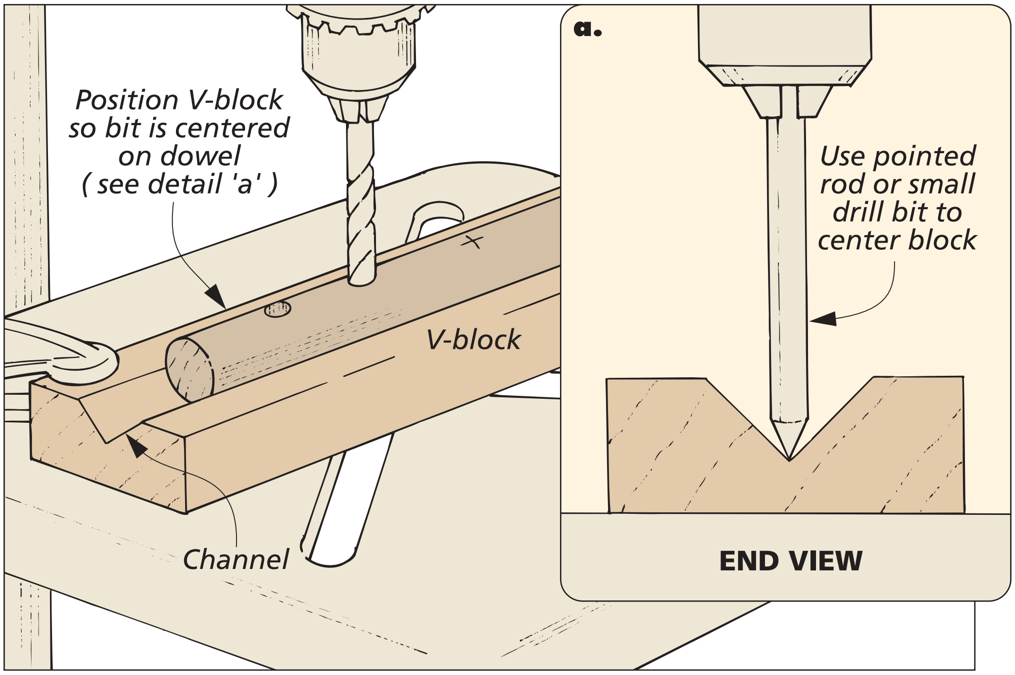
First, start with a hole saw and make a cut just deep enough to see the outline of the saw (Fig. 1). Next, drill a relief hole on the cut line left by the hole saw, as shown in Fig. 1. (A Forstner bit works best.) Finally, reinsert the hole saw and complete the hole (Fig. 2).

10. Round Stock

To make drilling a hole in round stock a snap, I use a simple V-block. It improves the accuracy of the holes being drilled by aligning the bit dead center on the stock.

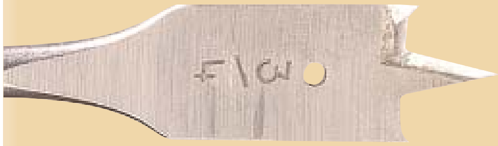
To make the block, set your table saw blade at a 45° angle. Then make two intersecting cuts to form a 90° channel the length of the block.

Positioning the V-block is just a matter of using a small bit or a pointed rod in the chuck to align the bottom of the channel with the rod tip, as in detail 'a' at right. Then just clamp the V-block to the table.


Position V-block so bit is centered on dowel (see detail 'a')
V-block
Channel
a.
Use pointed rod or small drill bit to center block
END VIEW

WHICH BIT WHERE AND WHEN?

Twist bits are the most unversal and widely available. They can be used in both wood and metal.



Spade bits are for drilling larger holes in wood only. They're economical and available in larger sizes than twist bits.

Forstner bits are for drilling flat-bottomed holes with little chip-out in wood only. Their cost is much higher than other bits.

A brad-point bit is a combination of a twist bit and a small Forstner. It is self-centering and cuts flat-bottomed holes.